COMMENTS

The enclosed is responsive to the Examiner's Final Office Action mailed on 6/22/04 and is being filed pursuant to a Request for Continued Examiner (RCE) as provided under 37 CFR 1.114. At the time the Examiner mailed the Final Office Action claims 1 and 3 – 24 were pending in the present application. By way of the present response the Applicant has: 1) amended claims 1, 8-10, 13-17, and 19-22; 2) added new claims 25 - 29; and, 3) has not canceled any claims. As such claims 1 and 3 – 29 are currently pending. The Applicant respectfully requests reconsideration of the present application and the allowance of all claims.

The Examiner has maintained the rejection that all of the Applicant's independent claims are anticipated by the Widmer reference (U.S. Patent No., 6,496,540 through U.S. Patent No. 3,980,826). Essentially, the Examiner has reasoned that Widmer "teaches reducing the low frequency content of [a] signal which results in *less phase shift error*..."; therefore, the Applicant's claim element "adjusting phase relationship at the transmitting end of the link" is covered by Widmer. See, Examiner's Final Office Action mailed 6/22/04, pg. 1.

By declaring that Widmer's teaching of low frequency amplitude adjustment is the same as the Applicant's claiming of phase adjustment, the Examiner is essentially regarding the amplitude of a signal's low frequency content and the phase of a signal as the same thing. This is simply an incorrect perspective.

The amplitude of a frequency component is a measure of the strength of a signal at a particular frequency (e.g., 1.0 volt^2 at 100 MHz; 2.0 volt^2 at 500 MHz; 3.0 volt^2 at 1 GHz). Phase is a measure of where a signal (or frequency component) resides in time

(e.g., delayed 1 nsec., delayed 2 nsec, etc.). Therefore the Examiner's reasoning that Widmer's teaching of low frequency amplitude adjustment is the same as the Applicant's claiming of phase adjustment is clearly in error. The parenthetical examples provided above by the Applicant clearly show that their units are very different (e.g., volt^2 @ MHz vs. nsec). Would the Examiner also conclude that "yards" are the same as "kilograms"?

Moreover, the Examiner's taking of the statement of Widmer that "reducing the low frequency content of [a] signal . . . results in *less phase shift error*..." as proof that low frequency amplitude adjustment is the same as phase adjustment can be rectified simply by referring to the full citation of the statement in dispute rather than only a portion of it as has been done by the Examiner.

The full citation of the statement in dispute is ". . . reducing the low frequency content of the signal, which results in less phase shift error per unit distance . . .". Here, Widmer appears to be referring to nothing more than pre-emphasis to account for signal distortion imposed by a channel in which different frequency components of the signal are attenuated differently; and/or, the different frequency components travel at different speeds. The longer a signal travels along the channel, the greater the distortion (hence, less error per unit distance).

Because such distortion can change the shape of the signal (e.g., a pulse gets wider in time as it travels along the channel), the distortion can often be referred to as "phase shift error". But this only serves as proof that in order to preserve a signal's shape along the channel its frequency amplitude and phase components should stay in their transmitted state with respect to each other along the channel. This does not

serve as proof that frequency amplitude and phase are "the same thing" as the Examiner has incorrectly reasoned. At best Widmer indicates a relationship may exist between the frequency components of a signal and the "phase error" of the signal – but this is very different than the Examiner's incorrect assertion that frequency components and phase are the same thing.

Thus, in summary, the Applicant respectfully submits that the Examiner has incorrectly reasoned that low frequency signal amplitude and phase are the same thing; and, the Applicant's independent claims should no longer be deemed unpatentable under this incorrect reasoning.

Because the Applicant's independent claims should no longer be rejected all of the Applicant's claims are allowable.

The Applicant, moreover, repeats the arguments filed on April 5, 2004 as they essentially provide a correct in depth analysis of the Examiner's complete rejection.

Claims 1-24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,496,540, of Widmer ("Widmer"). The Examiner stated that

> Widmer discloses skew adjustment algorithm in "Transformation of parallel interface into coded format with preservation of baud-rate" wherein "the step of adjusting transmission delay by a dynamically adjustable delay in each transmission link may be included. The step of retiming coded data blocks on each link with a dedicated adjustable clock, and the step of eliminating skew among the links by providing a second retiming of data transferred on the links at a rate less than the predetermined baud rate with a clock system shared by all links may be included. The steps of receiving transmitted coded data blocks from the transmission lines at a receiver end is preferably included.

(p. 2, Office Action 6/22/04)

Applicants respectfully submit, however, that amended claim 1 is not anticipated by Widmer under 35 U.S.C. 102§(e).

Widmer discloses a transformation of parallel interface into coded format with preservation of baud-rate. According to Widmer, uncoded data blocks having predetermined baud rate are demultiplexed to "sequentially distribute the data blocks to encoders, encoding the data blocks at the predetermined baud rate, and serializing the coded data blocks for serially transmitting data at the predetermined baud rate"(Widmer, Abstract).

Further, Widmer discloses that

> In still other methods, the step of adjusting transmission delay by a dynamically adjustable delay in each transmission link may be included. The step of retiming coded data blocks of each link with a dedicated adjustable clock, and the step of eliminating skew among the links by providing a second retiming of data transferred on the links at a rate less than the predetermined baud rate with a clock system shared by all links may be included.

(Widmer, col.2, lines 23-30, emphasis added).

Specifically, Widmer discloses the adjusting transmission delay in the transmission link:

> The data output from the transmitter of FIG.1 may be launched on fiber optic or electromagnetic transmission lines (Links). At the high rates of this example, the signal distortion introduced by frequency dependent parameters of electromagnetic lines require compensation even for short links. This may be done with preemphasis at the transmitter or by compensation at the receiver. The preferred embodiment uses digital preemphasis techniques at the transmitter similar to those described in U.S. Pat. No. 3,980,826, to Widmer, entitled " Means for Predistorting Digital Signals", which describes the techniques for Manchester type coded signals with a run-length of at most two.

(Widmer, col.9, lines 41-53, emphasis added).

More specifically, distortion at the transmitter site, according to Widmer, is minimized by

> ...reducing the low frequency content of the signal, which results in less phase shift error per unit distance. This is accomplished by distinguishing bits encoded at the lower frequency of the bifrequency encoded data and then reducing the

amplitude of the low frequency bits to a relatively small fraction of their initial amplitude during the latter portion of each of the bit periods.

(Widmer, U.S. Pat. No. 3,980,826, see Abstract and Fig.4, emphasis added).

Thus, Widmer's digital preemphasis at the transmitter site reduces merely the amplitude of the low frequency bits to a relatively small fraction of their initial amplitude during the latter portion of each of the bit periods rather than directly adjusting the phase of the transmitting signals on the transmitter site of the link. In addition, Widmer's digital preemphasis at the transmitter site is performed to preclude the signals from distortion over the transmission link in advance, without measuring the actual phase relationship between signals at the receiver end of the link.

Hence, Widmer does not disclose measuring the skew between the clock and data signals at the receiving end of the serial link and adjusting phase relationship of the transmitting data and clock signals at a transmitting end of the serial link to reduce the measured skew between the data and clock signals, as recited in claim 1:

> A method, comprising:
> (a) measuring a skew between a data signal and a clock signal at a receiving side of a serial link; and
> (b) adjusting a phase relationship between said data signal and said clock signal to reduce said skew, wherein said adjusting of said phase relationship occurs at a transmitting side of said serial link.

(Claim 1) (emphasis added)

Since Widmer does not set forth all the elements of claim 1, applicants respectfully submit that claim 1 is not anticipated by Widmer under 35 U.S.C. 102§(e).

Given that dependent claims 3-7 depend, directly or indirectly on claim 1, and add additional limitations, applicants respectfully submit that claims 3-7, are likewise, not anticipated by Widmer under 35 U.S.C. §102 (e).

Independent claims 8 and 17 contain substantially similar limitations to claim 1. Therefore, applicants respectfully submit that claims 8 and 17, for at least the same reasons as mentioned above, are not anticipated by Widmer under 35 U.S.C. 102§(e).

Given that dependent claims 9-16 and 18-24 depend, directly or indirectly on claim 8 and 17, respectively, and add additional limitations, applicants respectfully submit that claims 9-16 and 18-24, are likewise, not anticipated by Widmer under 35 U.S.C. §102 (e).

The Applicant's effective silence to the dependent claims should not be construed as an admission by the Applicant that the Applicant is complicit with the Examiner's rejection of these claims. Because the Applicant has demonstrated the patentability of the independent claims, the Applicant need not substantively address the theories of rejection applied to the dependent claims.

It is respectfully submitted that in view of the amendments and arguments set forth herein, the applicable rejections and objections have been overcome. If there are any additional charges, please charge Deposit Account No. 02-2666 for any fee deficiency that may be due.

Respectfully submitted,

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